

## CLAIMS

What is claimed is:

1. A focusing method for a moving object which utilizes a photographic instrument to take images of a moving object, and focuses said photographic instrument by means of a pattern matching method, comprises the following steps:

set an optimal matching pattern position;

retrieve a serial image of said moving object;

acquire an initial pattern of said moving object and an initial pattern position according to said serial image; and

compare said initial pattern position and said optimal matching pattern position so as to make an adjustment in the photographic angle of said photographic instrument.

2. The focusing method for a moving object of claim 1, wherein said optimal matching pattern position is the focus of said photographic instrument.

3. The focusing method for a moving object of claim 1, wherein said optimal matching pattern position is around the focus of said photographic instrument.

4. The focusing method for a moving object of claim 1, wherein the acquisition of said initial pattern comprises the following steps:

retrieve an image of said serial image;

figure out a gray histogram of said image;

figure out a histogram projection drawing of said image; and

acquire said initial pattern and said initial pattern position according to said gray histogram and said histogram projection drawing.

5. The focusing method for a moving object of claim 1, wherein the adjustment of said photographic angle is the conversion of the difference between said initial pattern

position and said optimal matching pattern position into the adjusted photographic angle of said photographic instrument.

6. A focusing method for a moving object which utilizes a photographic instrument to take images of a moving object, and focuses said photographic instrument by means of a pattern matching method, comprises the following steps:

retrieve a serial image of said moving object;

acquire an initial pattern of said moving object and an initial pattern position according to said serial image;

carry out pattern matching and search for an optimal matching position of said moving object according to said serial image;

acquire an updated pattern and an updated pattern position of said moving object according to said optimal matching position; and

make an adjustment in a photographic angle of said photographic instrument according to said updated pattern position.

7. The focusing method for a moving object of claim 6, wherein said pattern matching is carried out according to the comparison between said initial pattern and the image of said serial image.

8. The focusing method for a moving object of claim 6, wherein the determination of said optimal matching position is based on the comparison between said initial pattern and the image of said serial image, so as to decide that the image of said serial image would represent the pattern position of said moving object.

9. The focusing method for a moving object of claim 6, wherein the acquisition of said initial pattern comprises the following steps:

retrieve an image of said serial image;

figure out a gray histogram of said image;

figure out a histogram projection drawing of said image; and

acquire said initial pattern and said initial pattern position according to said gray histogram and said histogram projection drawing.

10. The focusing method for a moving object of claim 6, wherein the acquisition of  
5 said updated pattern comprises the following steps:

retrieve an updated image of said serial image according to said optimal matching position;

figure out a gray histogram of said updated image;

figure out a histogram projection drawing of said updated image; and

10 acquire said updated pattern and said updated pattern position according to said gray histogram and said histogram projection drawing.

11. The focusing method for a moving object of claim 6 or 10, wherein before the step of figuring out a gray histogram for said updated image, further comprises a step of carrying out local enhancement according to said initial pattern.

15 12. The focusing method for a moving object of claim 6, wherein the adjustment of said photographic angle is the conversion of the difference between said initial pattern position and said updated pattern position into said adjusted photographic angle.